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Date: Sat, 30 Dec 1995 02:03:41 -0600 (CST)  
Message-Id: <199512300803.CAA00644@uro.theporch.com>  
Errors-To: ws4s@midtenn.net  
Reply-To: glowbugs@theporch.com  
Originator: glowbugs@theporch.com  
Sender: glowbugs@theporch.com  
Precedence: bulk  
From: glowbugs@theporch.com  
To: Multiple recipients of list <glowbugs@theporch.com>  
Subject: GLOWBUGS digest 61  
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas  
X-Comment: Please send list server requests to listproc@theporch.com  
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#### GLOWBUGS Digest 61

Topics covered in this issue include:

- 1) Bypassing Silicon Diodes  
by EricNess@aol.com

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Date: Sat, 30 Dec 1995 03:00:36 -0500  
From: EricNess@aol.com  
To: glowbugs@theporch.com  
Subject: Bypassing Silicon Diodes  
Message-ID: <951230030036\_80983474@emout04.mail.aol.com>

Many thanks for the responses to my post regarding hum generated in my quick and ugly breadboard power supply. I was going to say quick and dirty but, I was able to clean it up very nicely.

The first fix was the bypassing of the silicon rectifiers. I simply placed 0.01 uF caps in parallel with each of the four diodes in the bridge. Two explanations were presented as to why this bypassing technique works. I believe the primary cause of the hum to be the "hard switching" characteristic of the diodes. In this case the power supply was very lightly loaded and so each diodes would only conduct a small fraction of each half cycle generating harmonic energy that could easily reach 40 and 49 meters.

In theory the harmonics can be restricted to lower frequencies simply by forcing the diodes to conduct during a greater portion of the cycle. An easy way to verify this theory would be to decrease the bleeder resistor value but, I am not eager to clip out the caps just to test this theory. Perhaps

I'll try this when I make the slow and pretty version of the power supply.

I too had read of the problem with RF leaking backwards into the power supply and mixing with 60/120 Hz. In my case I think this was a secondary effect as I was unable to eliminate the hum by placing large ferrite cores on the power supply leads.

By the way, those ferrite cores are real nifty devices for removing rf from just about any place it's not supposed to be. The cores I am using were removed from discarded video monitor cables I fished out of the trash. Just one of these cores was able to restore domestic tranquility in my home by keeping the CW buzz out of my wife's telephone calls.

73's, Eric WD6DGX

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End of GLOWBUGS Digest 61

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